

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in this patent application:

Claims 1 to 12. (canceled)

13. (new) A method for producing a mechanical part by computer-aided design including a preliminary step in which body portions of the part are broken down into elementary strata, followed by steps including manufacture of the elementary strata and reconstruction of the part by superposing and assembling the manufactured strata, wherein the method comprises the steps of:

defining at least one fluid transport circuit in the part;

breaking down the fluid transport circuit into a plurality of elementary chambers as part of the break-down associated with the part and during the break-down of the part;

producing the elementary chambers in the elementary strata of the part during the manufacture of the elementary strata; and

completely reconstructing the fluid transport circuit during the superposition and the assembly of the elementary strata.

14. (new) The method of claim 13 which further includes the steps of:

breaking-down an additional isolating circuit into elementary isolating chambers as part of the break-down associated with the part and during the break-down of the part;

producing the elementary isolating chambers in the elementary strata of the part during the manufacture of the elementary strata; and

reconstructing the isolating circuit during the superposition and the assembly of the elementary strata.

15. (new) A mechanical part including a body having at least one fluid transport circuit comprised of a plurality of channels formed in the body at a predetermined distance from a heat exchange surface associated with the body, wherein the part and the fluid transport circuit are produced by the method of claim 1 or 2, wherein the fluid transport circuit is completely reconstructed during the assembly of the elementary strata, and wherein the plurality of elementary chambers are provided in at least one portion of the elementary strata and are placed in fluid-tight communication.

16. (new) The mechanical part of claim 15 wherein, following reconstruction of the elementary strata, the fluid transport circuit forms a plurality of parallel channels in the

body of the part which follow or copy surface portions of the part at a predetermined distance from the surface portions.

17. (new) The mechanical part of claim 15 wherein, following reconstruction of the elementary strata, the fluid transport circuit forms a layer-shaped chamber in the body of the part.

18. (new) The mechanical part of claim 15 wherein the fluid transport circuit includes a connection to a temperature regulating device.

19. (new) The mechanical part of claim 15 wherein interior portions of the fluid transport circuit include a plurality of transverse fins providing mechanical reinforcement and stirring the fluid.

20. (new) The mechanical part of claim 15 which, following reconstruction of the elementary strata, further includes an additional isolating circuit provided in at least one portion of the elementary strata and having a plurality of elementary chambers placed in fluid-tight communication.

21. (new) The mechanical part of claim 20 wherein the isolating circuit is comprised of a plurality of parallel

channels.

22. (new) The mechanical part of claim 20 wherein the isolating circuit forms a layer-shaped chamber.

23. (new) The mechanical part of claim 15 which further includes a mechanical adhesive between the elementary strata on regions of the part extending from the channels to outside portions of the part, and an adhesive with a predetermined thermal conductivity on regions of the part extending from the fluid transport circuit to surface portions of the part.

24. (new) The mechanical part of claim 15 wherein the fluid transport circuit is filled with a fluid selected from the group consisting of a heat exchange fluid, a thermal insulation fluid, a liquid material, a pulverulent material and a marking fluid.

25. (new) The mechanical part of claim 15 wherein the mechanical part is a mold.